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Dear Directors,

We are writing on behalf of the Scientific Guidance Panel (SGP) for the California Environmental Contaminant Biomonitoring Program (Biomonitoring California) with our recommendations for supporting the current and future efforts of the Program. Since its establishment by legislation (Senate Bill 1379, Perata and Ortiz, Chapter 599, Statutes of 2006), the SGP has met three times yearly to review progress and advise the program.

During our service on the panel we have been deeply impressed with the significant impact of the Biomonitoring California program. The staff of the California Department of Public Health (CDPH), the Office of Environmental Health Hazard Assessment (OEHHA), and the Department of Toxic Substances Control (DTSC) has continued their outstanding work developing and growing the program. Despite limited resources, the program has returned results to participants in ongoing studies, launched many new studies, built laboratory capacity, obtained external funding, published findings and actively engaged the public.

Specifically, in its first ten years, Biomonitoring California has grown into a nationally recognized biomonitoring program with laboratory capability for measuring close to 200 chemicals. The program has conducted 20 biomonitoring studies with more than 30 collaborators, measuring chemicals in more than 7,000 Californians. In the process, the Program has detected elevated chemical exposures in at-risk populations and pioneered methods for returning results to participants, educating and empowering people to make informed decisions about reducing chemical exposures. The Program's studies have also identified emerging chemicals of concern—those that provide early warning of new environmental hazards in California, and intervention studies have demonstrated the effectiveness of public health efforts to reduce chemical exposures.

For example, one of Biomonitoring California's collaborative studies revealed that ethnically diverse, predominantly low-income pregnant women in California had the highest levels of PBDE (polybrominated diphenyl ether) flame retardants ever reported for pregnant women worldwide. Prenatal exposure to PBDE flame retardants is linked to lower cognitive capacity in school-age children. Subsequent to California policies limiting PBDEs, a more recent collaborative study from the Program found that PBDE levels are dropping in

the population of diverse, low-income pregnant women, demonstrating the efficacy of policy actions.

In a separate intervention study funded by the California Breast Cancer Research Program and conducted by UC Berkeley in collaboration with the Biomonitoring California laboratory and a team of youth researchers, the Health and Environmental Research in Make-up Of Salinas Adolescents (HERMOSA) study enrolled Latina girls living in Salinas and measured hormone-disrupting chemicals in their bodies before and after reducing their use of chemical-intensive personal care products. After just 3 days of using alternative products, levels of all four chemical classes of concern decreased by 25 to 45 percent on average. The study generated new data demonstrating interventions that reduce exposure to endocrine disrupting compounds.

These biomonitoring studies are groundbreaking. And while we heartily commend this work and the Biomonitoring California staff for their extraordinary effectiveness in the setting of limited resources, we want to highlight the fact that without additional funding the Program cannot fully meet its legislative mandate. SB 1379 directs the State to establish a biomonitoring program that, “will assist in the evaluation of the presence of toxic chemicals in *a representative sample of Californians*, establish trends in the levels of these chemicals in Californians... and assess effectiveness of public health efforts and regulatory programs to decrease exposures [*emphasis added*].” Although the Program has launched an important regional study (see below on CARE), the total resources allocated to the program to date have been insufficient to support large enough studies to comprise a truly representative sample of Californians. Furthermore, when funding decreases, the Program risks losing lab personnel with specific analytical expertise. This means that the Program could lose the ability to analyze particular panels of chemicals, irrespective of the chemicals’ public health significance.

An efficient way to fulfill the original legislative vision of statewide surveillance is to expand the reach of the ongoing California Regional Exposure (CARE) Study. This study measures and compares environmental chemicals in people in eight regions encompassing the entire state. Depending on the increase in funding, expanded impact could include:

- Increased sampling to cover more regions of California more quickly—currently it will take 8 years to sample all regions of the state once;
- Expanded chemical analyses—current measurements are limited to metals and some perfluoroalkyl and polyfluoroalkyl substances (PFASs, such as PFOA and PFOS used to create non-stick and stain resistant surfaces). Additional funding would efficiently enable the program to routinely measure significantly more chemicals from people in all regions of the state; and
- Region-specific chemical monitoring—for example, the Program has added biomarkers of diesel exposure (1-NP) to a subset of samples from the Los Angeles area.

Additional funding would enable more of these types of region-specific sub-studies that are particularly informative for public policy.

Additional funding would also support high-impact smaller studies that address questions specific to particular public health or regulatory concerns. Such studies could target communities that are disproportionately affected by environmental contamination, with critical implications for environmental justice. These could include, for example:

- Studies in communities impacted by a specific exposure, such as pesticides or air pollution in the Central Valley;
- Intervention studies that examine regulatory effectiveness or investigate the impact of consumer product changes. For example, the ongoing Foam Replacement Environmental Exposure Study (FREES) focuses on low-income housing and measures participants’ flame retardant exposure before and after removal or replacement of foam-containing furniture in their home; and
- Studies that evaluate multiple samples from the same participant to increase our understanding of intra-individual exposure variation.

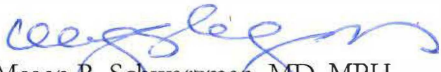
State support is also critical for developing non-targeted screening methods capable of identifying chemicals of emerging concern, such as substances used to replace chemicals that are regulated or phased-out. Finally, funding to add staff to the Program would amplify Biomonitoring California’s highly efficient efforts.

Additional staff would ensure that collected data are analyzed in a timely manner and that lab capacity could meet the demand of ongoing studies and collaborations.

Biomonitoring is a critical public health tool that can inform public policy and cost-effective interventions that reduce health care costs and could avoid the need for expensive environmental remediation. Additionally, maintaining a robust chemical laboratory analysis capability is essential to the State's ability to respond to exposures that result from industrial accidents, wildfires, terrorist attacks or other disasters. Increased support for Biomonitoring California would retain the laboratory chemical analytic capacity and equip the state to respond quickly in the setting of disasters.

Thank you for your support of the Biomonitoring California program, and for your consideration of expanded support. We look forward to continuing our collaboration with you in service to this critical public health program. Please feel free to contact us if we can be of additional service.

Sincerely,



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